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ABSTRACT

Forty-six Anglo-Americans, Indians, and Eskimos at an adult basic education institute were sampled with the 52-item Rokeach Dogmatism Scale (fourth edition) to measure their attitude change and to place each individual on an intensity continuum of the attitude. The age and educational characteristics of the sample and procedures used in the pre- and posttests are described. The differences in response between pre- and posttests are tabulated. The bulk of the document consists of graphs showing pre- and posttest responses for each of the items, presented as raw scores. When changes to a more open-minded attitude were made on the posttest by the Anglo-Americans and Eskimos, they were relatiely large changes, or a change on several items. Changes to a more closed-minded attitude for these groups were smaller or on fewer numbers of items. Changes made by the American Indians were opposite to the changes made by the Anglo-Americans and Eskimos. Results on approximately 70 percent of the items indicated open-minded attitudes for all groups. The fifth edition of the Rokeach D-Scale is appended. (Author/NH)

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EVALUATION OF ATTITUDE CHANGE IN PARTICIPANTS OF THE 1971 ADULT BASIC EDUCATION INDIAN INSTITUTE

OREGON COLLEGE of EDUCATION
MONMOUTH, OREGON

Sept. -- 1971
Janice Walter

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INTRODUCTION

The instrument selected to measure attitude change in the ABE Institute participants was the Rokeach Dogmatism Scale (fourth edition). It is a summated rating scale in which all items are intended to be approximately equal in "attitude value". Subjects respond with degrees of agreement or disagreement, and the scores of the items are summed to yield an individual's attitude score. The purpose is to place the individual on an intensity continuum of the attitude. The Rokeach D-Scale is intended to measure open-mindedness and closed-mindedness of an individual's belief systems, and general tolerance and authoritarianism. There are 52 items in the fourth edition which are divided into 14 sub-scales or categories

SAMPLE CHARACTERISTICS

TABLE I.

Age	Anglo	Indian	Eskimo	Total
21-30	9	7	1	17
31-40	6	4	0	10
41-50	2	3	1	6
51-60	4	2	1	7
60 and over	2	1	0	3
no answer	2	0	1	3
Total	25	17	4	46

TABLE II.

Education	Anglo	Indian	Eskimo	Total
Grad.	14	5	0	19
Undergrad.	1	2	1	4
no response	10	10	3	23
Total	25	17	4	46

The educational data was taken from registration cards and half the sample did not indicate educational level. It is assumed that most of the subjects in the no response category had not been to college.

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PROCEDURE

Participants of the ABE Institute were given a pre and post test--the pre test occurring ten days before the post test. Only those 46 individuals who completed both the pre and post test were included in the evaluation. Summated rating scales unfortunately often seem to consist of response-set variance since individuals have different tendencies to use certain types of responses such as extreme, neutral, agree or disagree. Therefore, difference scores between pre and post tests were used to correct for initial response sets.

The sign test, (a non-parametric statistic) was selected for testing the significance of difference between the pre and post test. Since the Rokeach D-Scale appears to meet the requirements of an ordinal scale much better than those of an internal scale, the applicant of a parametric statistic is likely not only to be inaccurate but to distort the data. Since the N of the sample was larger than 25, the normal approximation to the binomial distribution with the correction for continuity was used.

$$z = \frac{(x + .5) - \frac{1}{2}N}{\frac{1}{2}\sqrt{N}}$$

The scoring on the scale ranged from +3 to -3 but did not include zero. The responses of -3, -2, and -1 were transformed to -2, -1 and 0 in order to allow addition of the items for each individual's score within a category. If the scores were not transformed the interval of -1 to +1 (an interval of two rather than one) would introduce artifical variability. It became obvious in the analysis that certain items in a category, when summed, negated each other (that is cancelled out differences); therefore pre and post test response frequencies were graphed to indicate the direction of the group change in attitude on each item.

RESULTS

Table III reports the number of individuals who responded in a more open-minded direction on the post test than on the pre test (+), in a more closed-minded direction on the post test than on the pre test (-), and the number of individuals whose responses indicated no change (0). NF refers to no response. The response frequencies for each of the 52 items on the test follow Table III. Significance tests were not run on each item, although it is quite likely that some of them may show significant differences between pre and post test responses. The data in Table III is based on transformed scores, since several items in a category had to be summed. The data on the graphs are presented as raw scores, but transformation only requires that the -1, -2, and -3 response categories on the graphs be changed to 0, -1, and -2.

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TABLE III

CATEGORY	+	-	0	NR	Z-value
1. Isolationsim	24	9	12	1	2.44*
2. Contradiction within the belief system	19	12	15		1.08
3. Knowledge bias	17	15	14		.18
4 Self-proselyzation and inadequacy	24	17	5		.94
5 Pessimism and uncertainty	25	16	5		1.25
6 Rigidity of self-esteem	15	16	15		- .36
7. Self-aggrandizement and paranoid behavior	21	16	9		.66
8. Intolerance of cause oriented situations	27	16	3		1.52**
9. Intolerance of renegade and dissenter	22	19	5		.31
10. Appeal to authority bias-dependence	19	13	14		.88
11. Introversion	18	18	10		- .17
12. Minimization of "present"	14	12	20		.20
13 Underestimation of others	21	17	8		.48
14 "Left" oriented opinions	20	20	6		- .16

* significant at the .05 level
** significant at the .06 level

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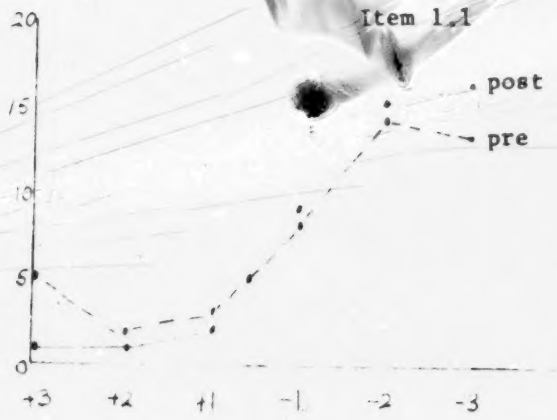
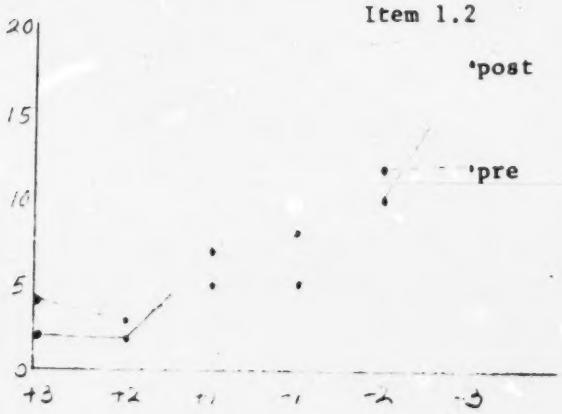
Isolationism



where N = 45
pre mdn = -2
post mdn = -2

The United States and Russia have just about nothing in common.



where N = 44
pre mdn = -2
post mdn = -2

The fast increasing technological fact of the superiority of the U.S. and the Americans being just on the moon have further weakened the threads of commonality between the U.S. and the rest of the world.

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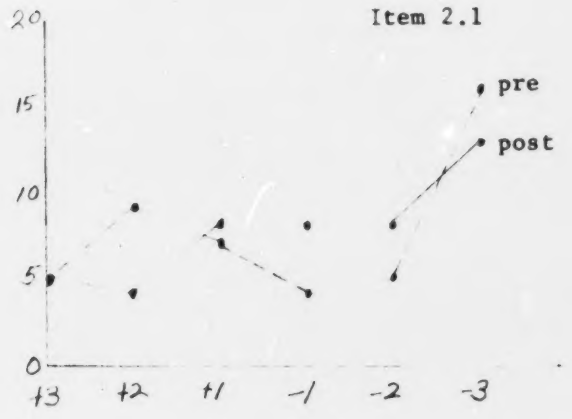
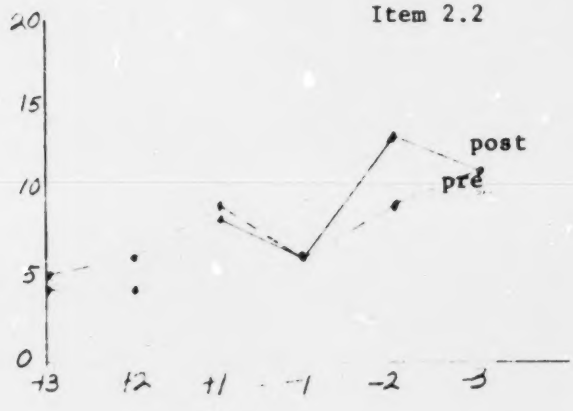
Contradictions within the belief system



where N = 46
pre mdn = -1
post mdn = -1

The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent, and are able to make the right decisions.



where N = 46
pre mdn = -1
post mdn = -2

Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.

Knowledge bias

Item 3.1

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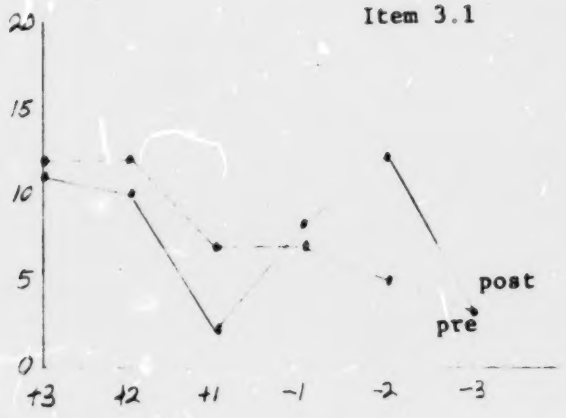
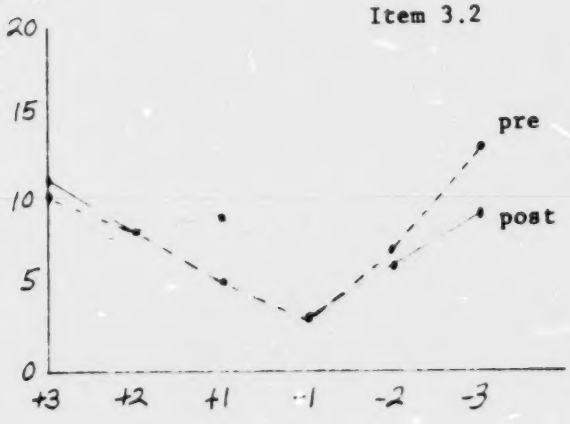


where N = 46
pre mdn = +2
post mdn = 0

It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes.

Item 3.2



where N = 46
pre mdn = 0
post mdn = +1

The truth is as one perceives it.

Self-proselyzation and inadequacy

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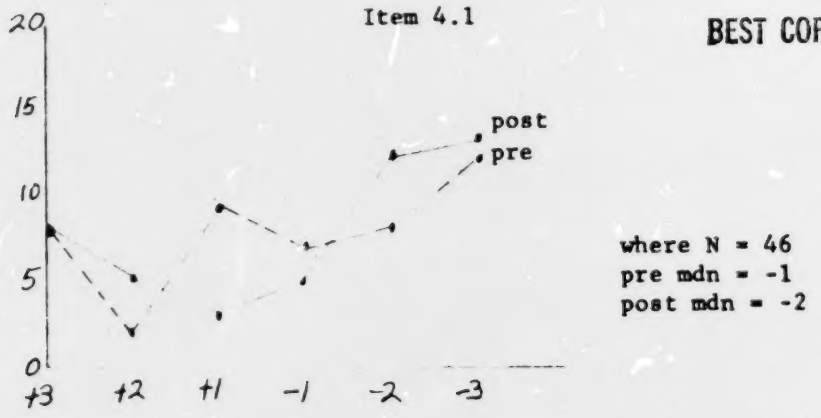
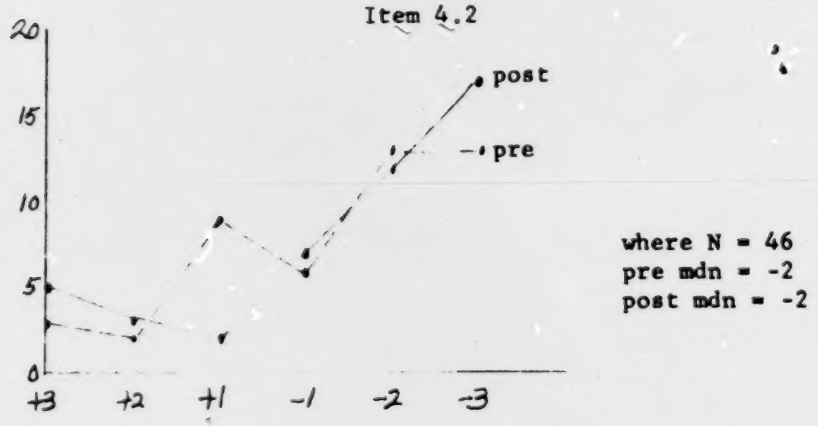


Man on his own is a helpless and miserable creature.



Fundamentally, the world we live in is a pretty lonesome place.

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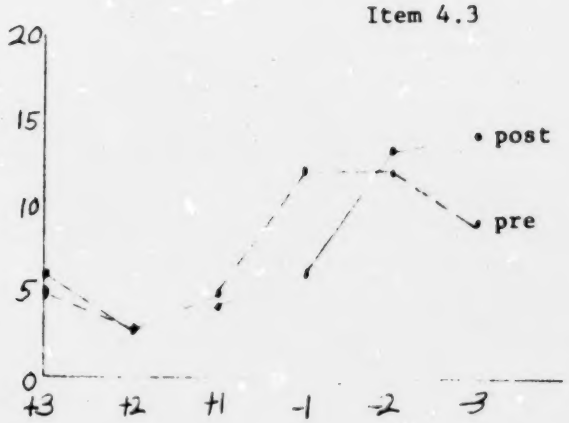
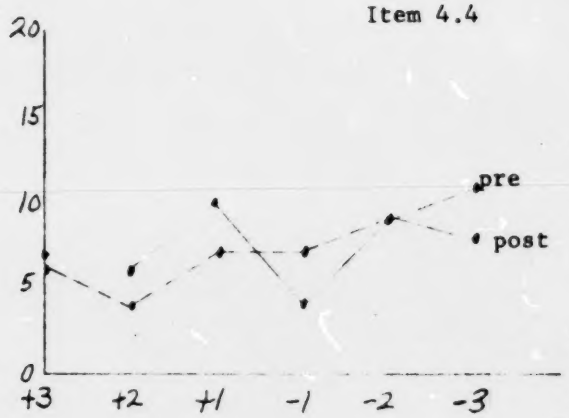
Item 4.3



where N = 46
pre mdn = -1
post mdn = -2

Most people just don't give a "damn" for others.

Item 4.4



where N = 44
pre mdn = -1
post mdn = +1

I'd like it if I would find someone who would tell me how to solve my personal problems.

Pessimism and uncertainty

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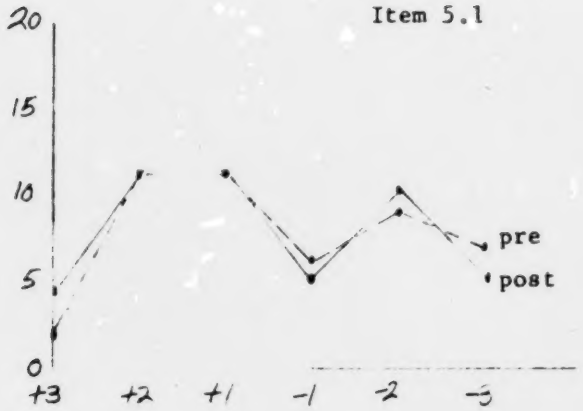
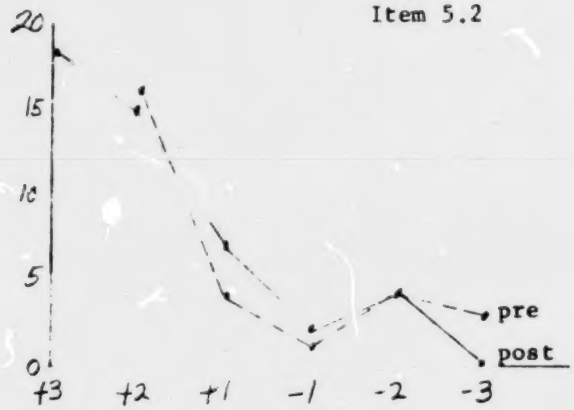
Item 5.1



where N = 46
pre mdn = +1
post mdn = +1

It is only natural for a person to be rather fearful of the future.

Item 5.2



where N = 46
pre mdn = +2
post mdn = +2

There is so much to be done and so little time to do it in.

Item 5.3

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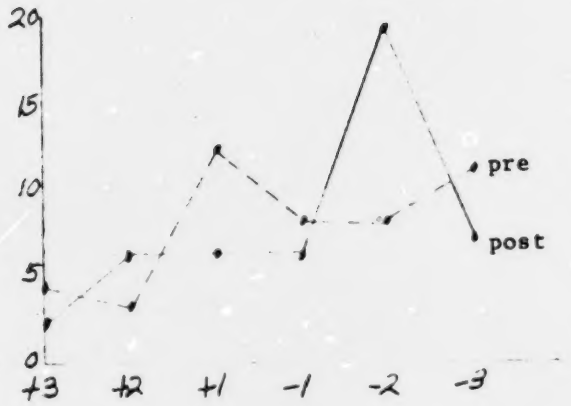
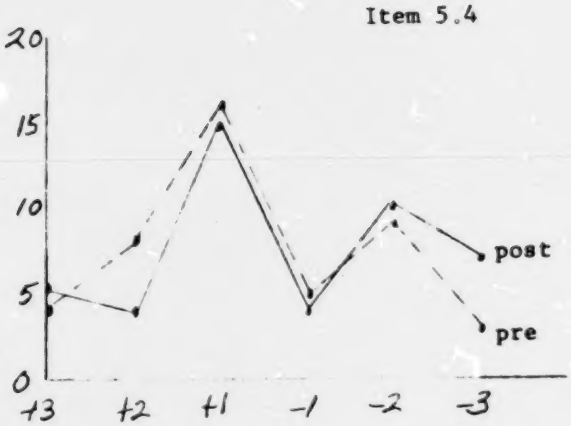


where N = 46
pre mdn = -1
post mdn = -2

Once I get wound up in a heated discussion I just can't stop.

Item 5.4



where N = 45
pre mdn = +1
post mdn = +1

In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

Item 5.5

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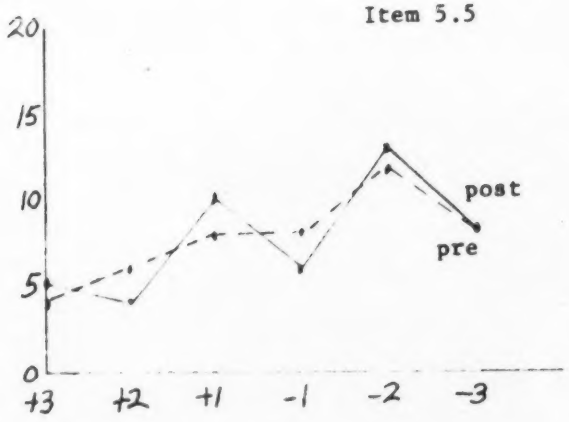
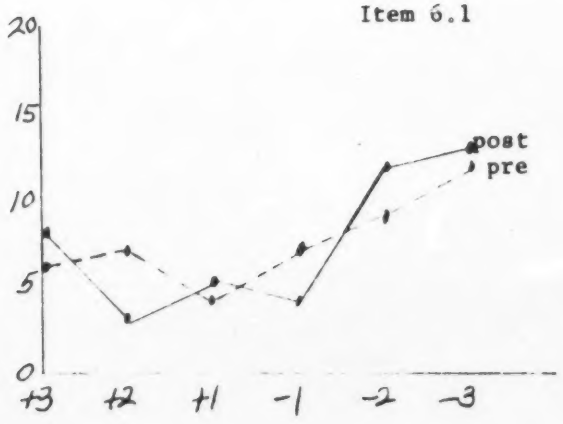


where N = 46
pre mdn = -1
post mdn = -1

In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.

Rigidity of self-esteem

Item 6.1



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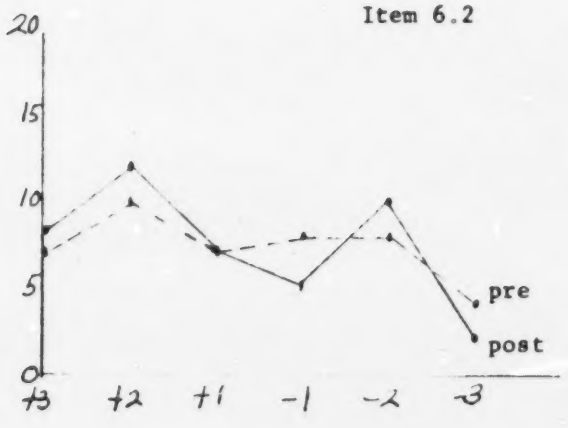
where N = 45
pre test mdn = -1
post test mdn = -2

It is better to be a dead hero than to be a live coward.

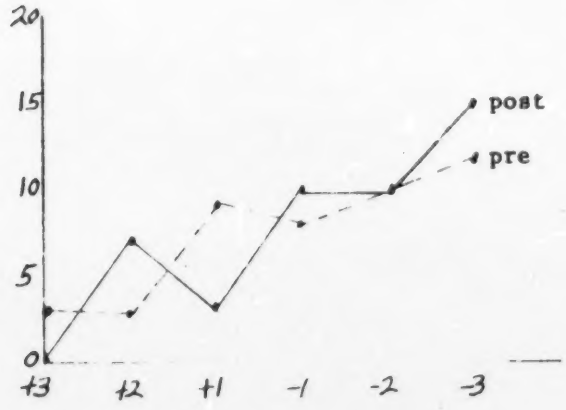
Item 6.2



where N = 44
pre test mdn = +1
post test mdn = +1

It is better to be deprived and have self-conceived rights than to live under equalitarian mannerism.

Self-aggrandizement and paranoid behavior



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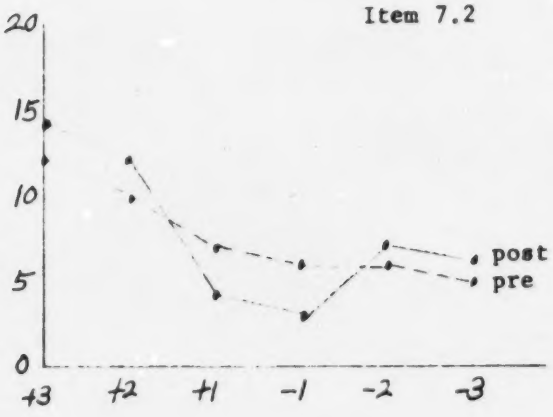
where N = 45
pre test mdn = -1
post test mdn = -2

While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespear.

Item 7.2



where N = 46
pre test mdn = +2
post test mdn = +1

The main thing in life is for a person to want to do something important.

Item 7.3

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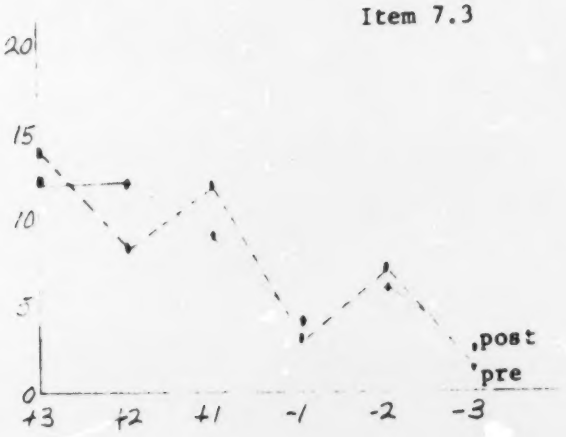
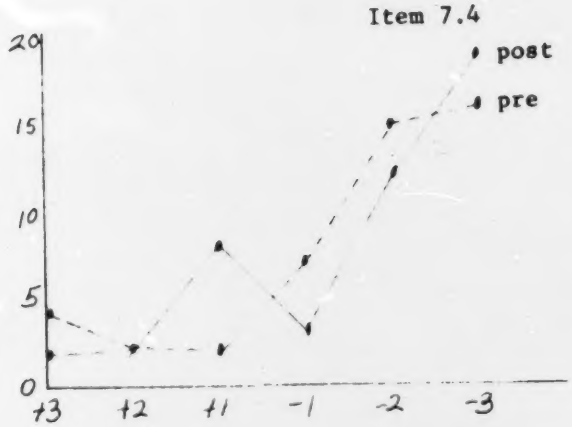


where N = 45
pre test mdn = +1
post test mdn = +2

If given the chance I would do something of great benefit to the world.

Item 7.4



where N = 46
pre test mdn = -2
post test mdn = -2

Most people are failures and it is the system which is responsible for this.

Intolerance of cause oriented situations

Item 8.1

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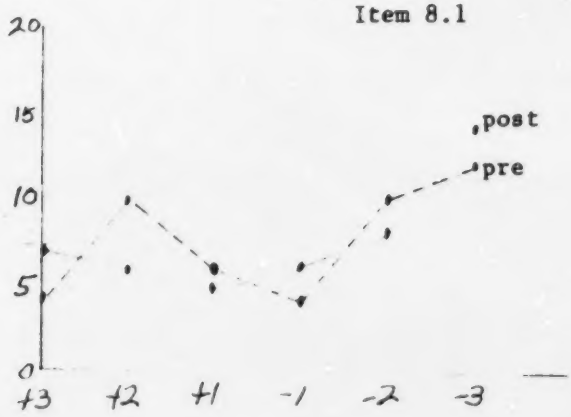
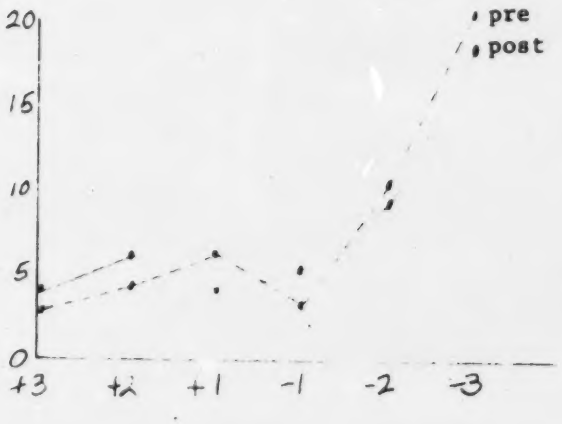


where N = 46
pre test mdn = -1
post test mdn = -1

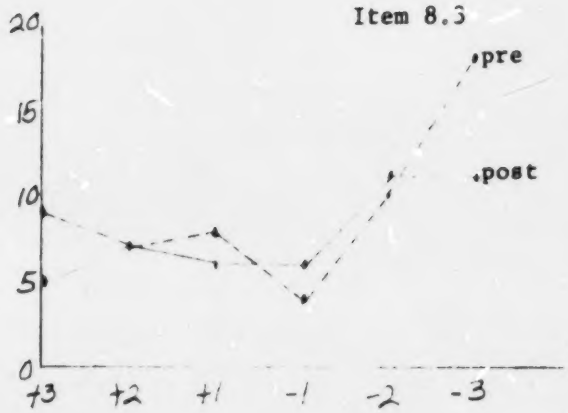
In the history of mankind there have probably been just a handful of really great thinkers.

Item 8.2



where N = 46
pre test mdn = -2
post test mdn = -2

There are a number of people I have come to hate because of the things they stand for.



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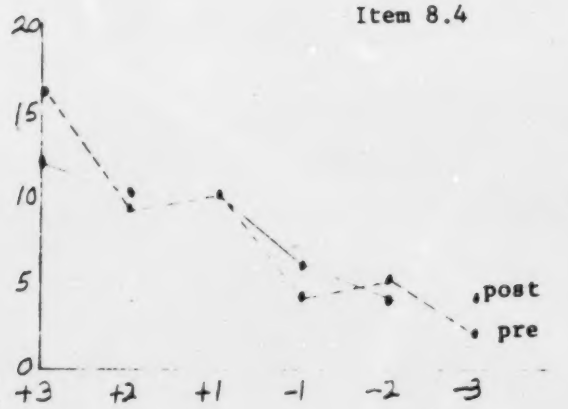
where N = 46
pre test mdn = +1
post test mdn = -1

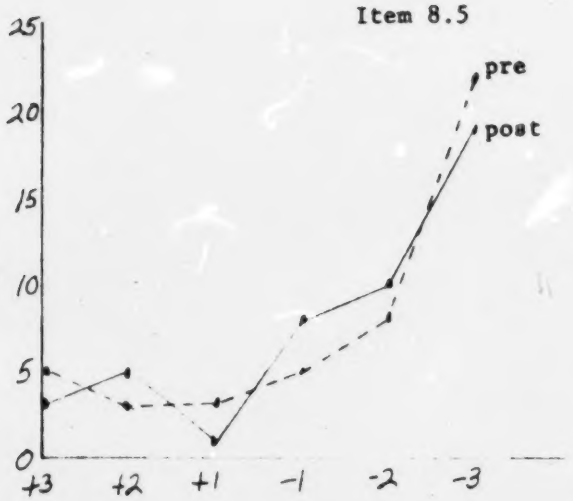
A man who does not believe in some great cause has not really lived.



Where N = 46
pre test mdn = +2
post test mdn = +1

It is only when a person devotes himself to an ideal or cause that life becomes meaningful.

Item 8.5



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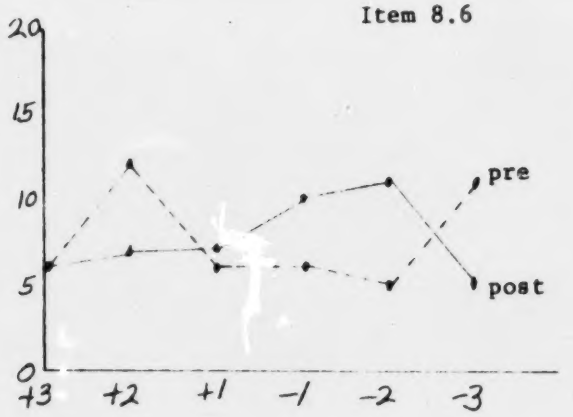
where N = 46
pre test mdn = -2
post test mdn = -2

Of all the different philosophies which exist in this world there is probably only one which is correct.

Item 8.6



where N = 46
pre test mdn = +1
post test mdn = -1

A person who gets enthusiastic about too many causes is likely to be pretty "wishy-washy" sort of person.

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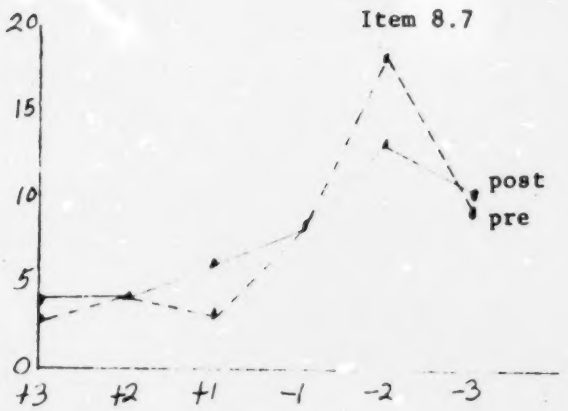
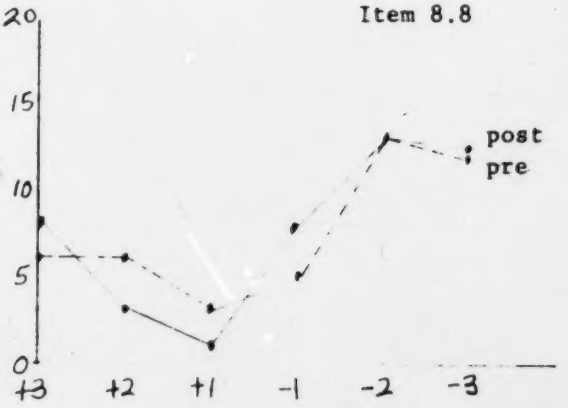


where N = 45
pre test mdn = -2
post test mdn = -2

To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.



where N = 45
pre test mdn = -2
post test mdn = -2

When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.

Item 8.9

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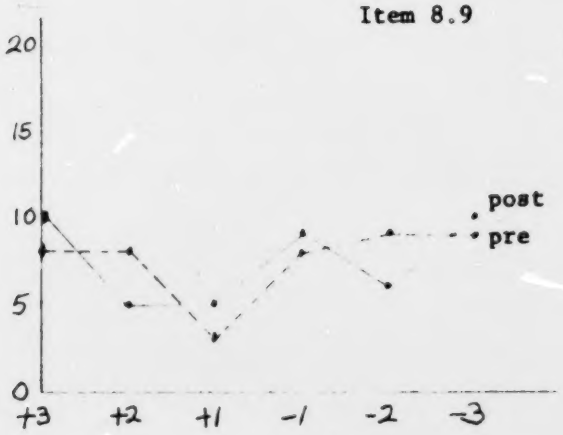
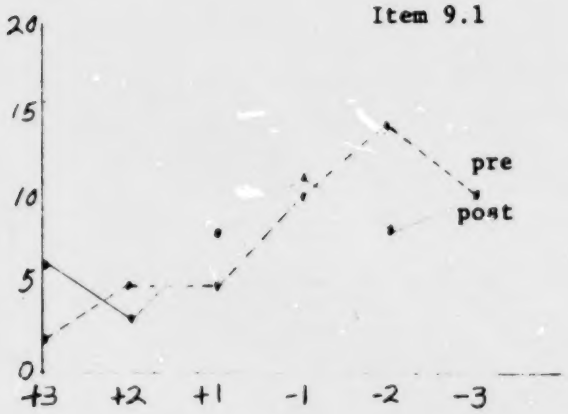


where N = 45
pre test mdn = -1
post test mdn = -1

In times like these, a person must be pretty selfish if he considers primarily his own happiness.

Intolerance of renegade and dissenter

Item 9.1



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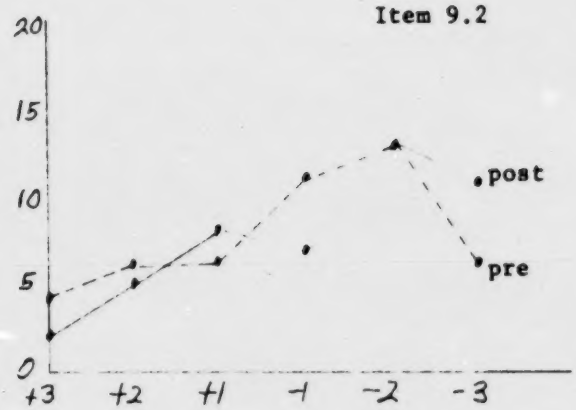
where N = 46
pre test mdn = -2
post test mdn = -1

The worst crime a person could commit is to attack publicly the people who believe in the same things he does.

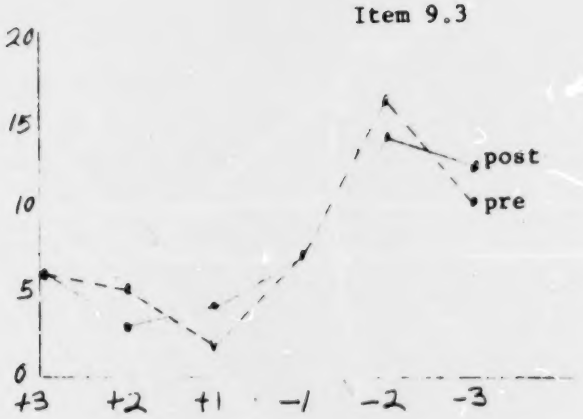
Item 9.2



where N = 46
pre test mdn = -1
post test mdn = -2

In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.

Item 9.3

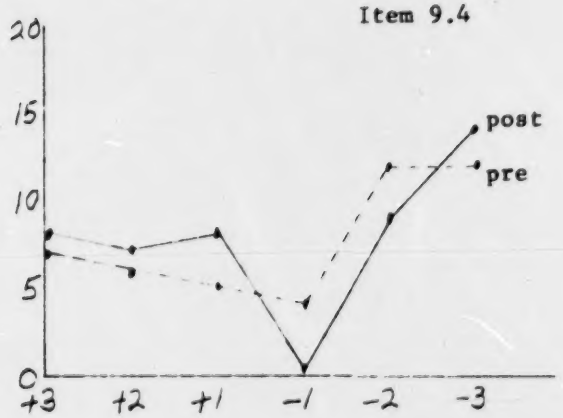


BEST COPY AVAILABLE

where N = 46
pre test mdn = -2
post test mdn = -2

A group which tolerates too much differences of opinion among its own members cannot exist for long.

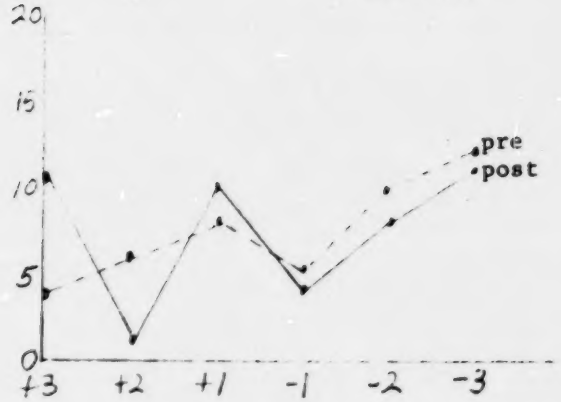
Item 9.4



where N = 46
pre test mdn = -2
post test mdn = 0

There are two kinds of people in this world; those who are for the truth and those who are against the truth.

Item 9.5



BEST COPY AVAILABLE

where N = 45
pre test mdn = -1
post test mdn = -1

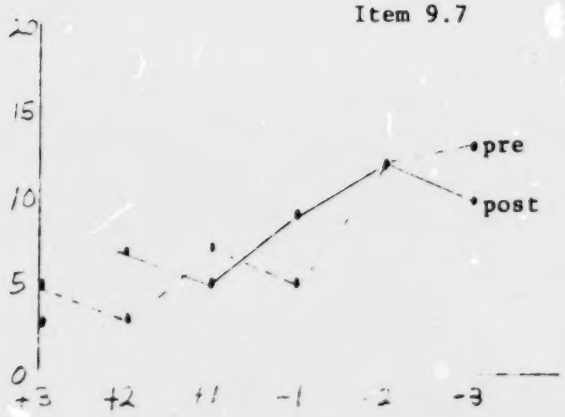
My blood boils whenever a person stubbornly refuses to admit he's wrong.

Item 9.6

where N = 46
pre test mdn = -1
post test mdn = -1

A person who thinks primarily of his own happiness is beneath contempt.

Item 9.7



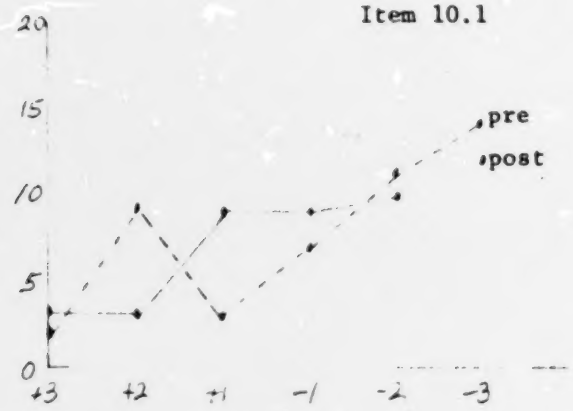
BEST COPY AVAILABLE

where N = 46
pre test mdn = -2
post test mdn = -1

Most of the ideas which get printed nowadays aren't worth the paper they are printed on.

Appeal to authority bias-dependence

Item 10.1

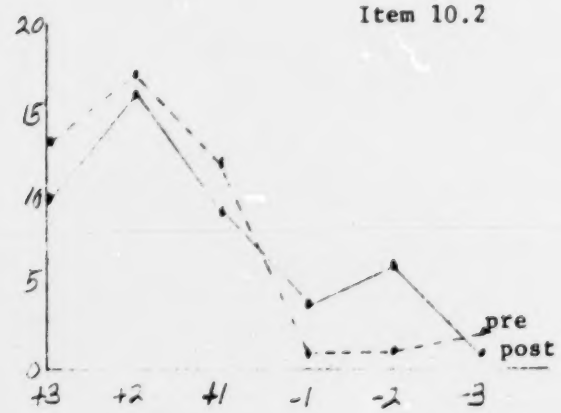


BEST COPY AVAILABLE

where N = 46
pre test mdn = -1
post test mdn = -2

In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.

Item 10.2

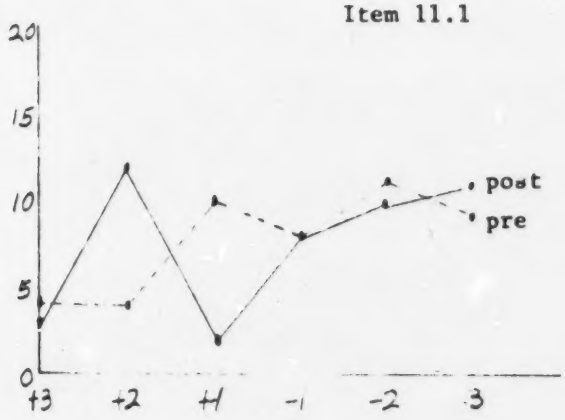


where N = 46
pre test mdn = +2
post test mdn = +2

It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

Introversion

Item 11.1



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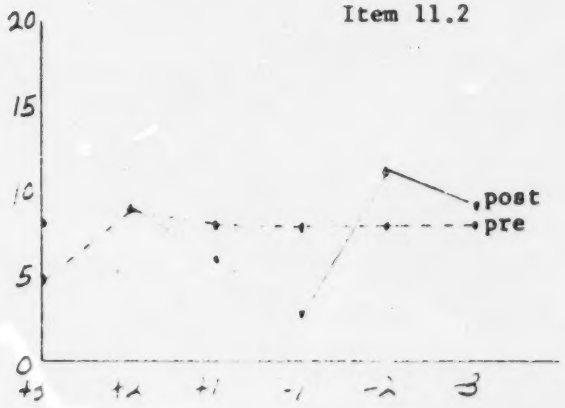
where N = 46
pre test mdn = -1
post test mdn = -1

In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

Item 11.2

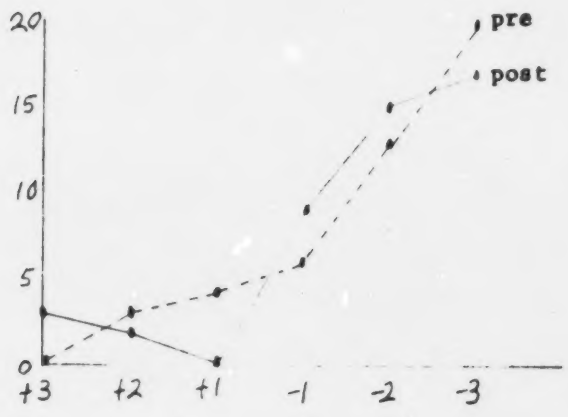


where N = 46
pre test mdn = -1
post test mdn = 0

To live, work and play among the people of one's own type is socially desirable.

Minimization of "present"

Item 12.1



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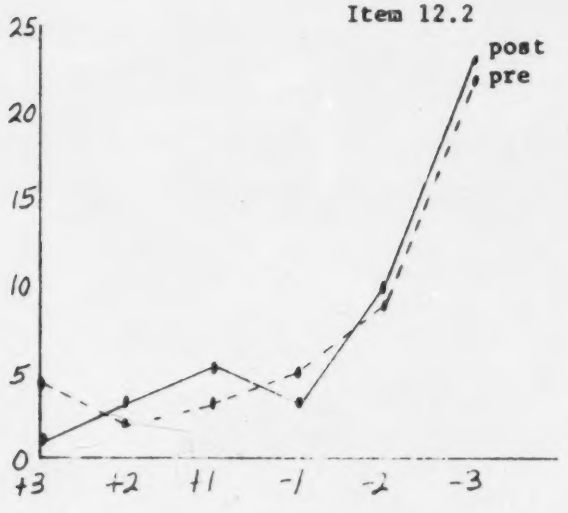
where N = 46
pre test mdn = -2
post test mdn = -2

The present is all too often full of unhappiness. It is only the future that counts.

Item 12.2



where N = 45
pre test mdn = -2
post test mdn = -3

There is no such thing as real present, it is only the past and future that matters.

Underestimation of others

Item 13.1

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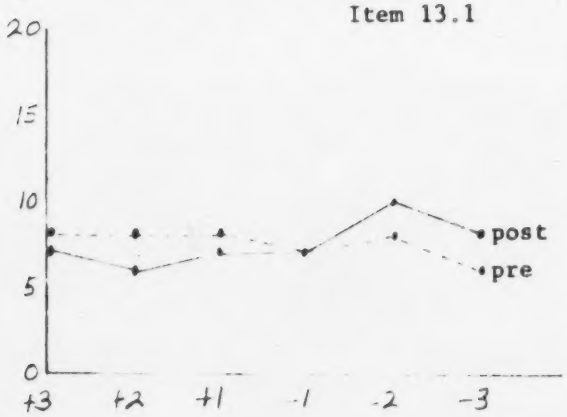
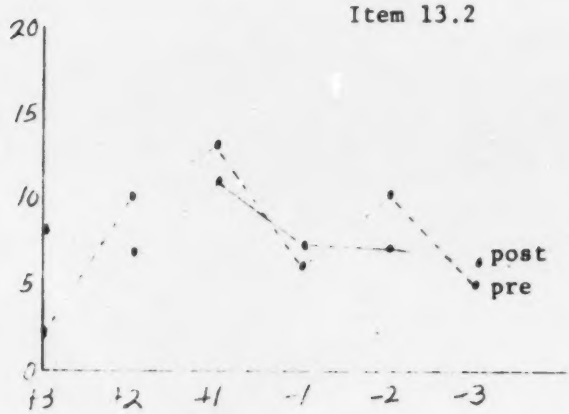


where N = 45
pre test mdn = +1
post test mdn = -1

If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."

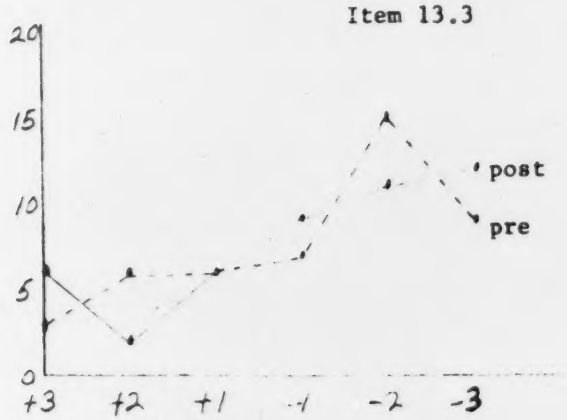
Item 13.2



where N = 46
pre test mdn = +1
post test mdn = +1

Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on.

Item 13.3



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where N = 46
pre test mdn = -2
post test mdn = -1.5

Most people just don't know what's good for them.

"Left" oriented opinions

Item 14.1

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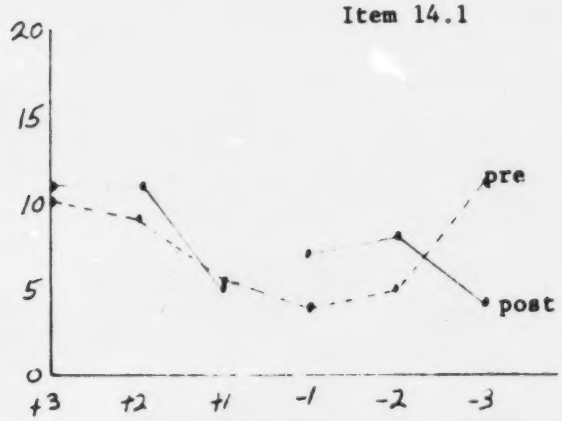
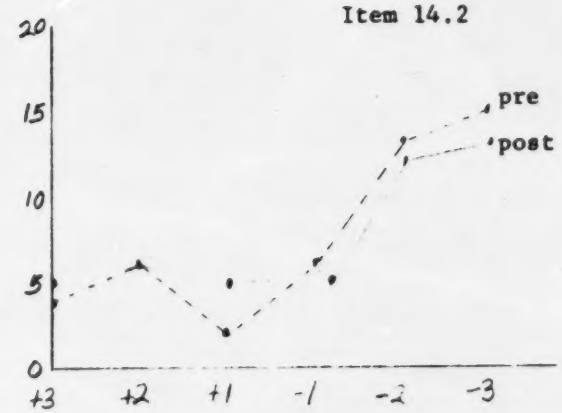


where N = 46
pre test mdn = +1
post test mdn = +1

It's just plain stupid to say that it was Franklin Roosevelt who got us into the war.

Item 14.2



where N = 46
pre test mdn = -2
post test mdn = -2

A person must be pretty stupid if he still believes in differences between the races.

Item 14.3

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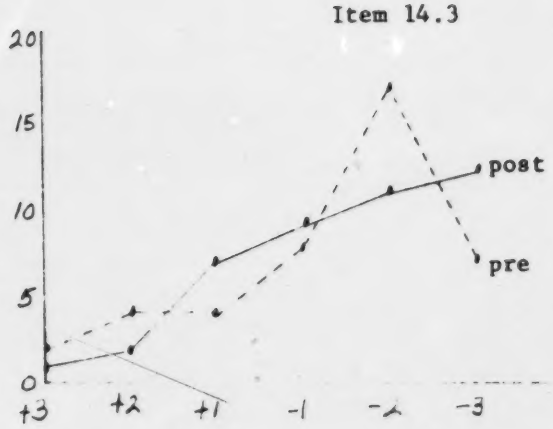
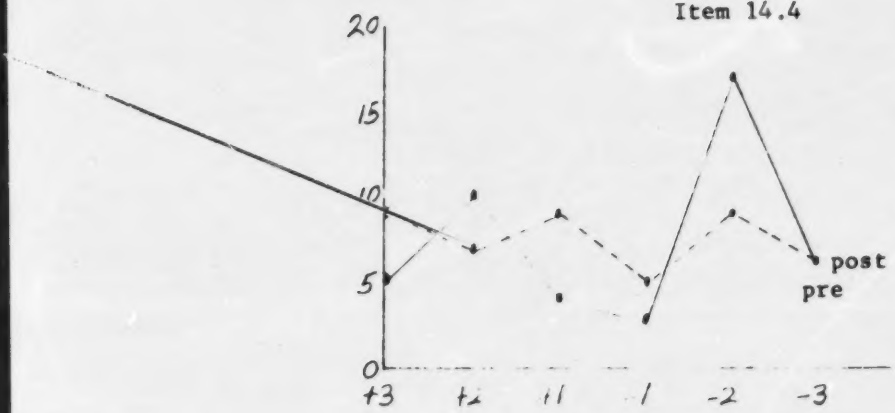


where N = 42
pre test mdn = -2
post test mdn = -2

There are two kinds of people who fought Truman's Fair Deal program; the selfish and the stupid.

Item 14.4



where N = 45
pre test mdn = +1
post test mdn = -2

A person must be pretty shortsighted if he believes that college professors should be forced to take special loyalty oaths.

Item 14.5

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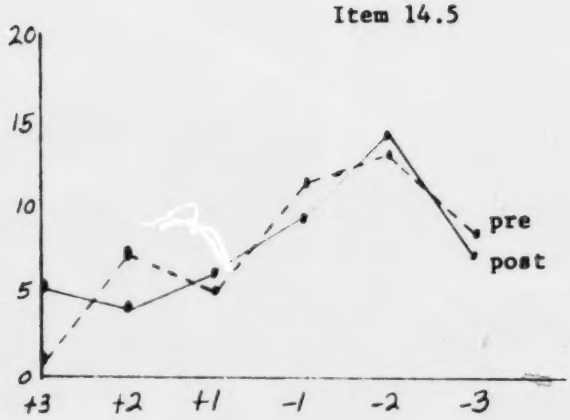
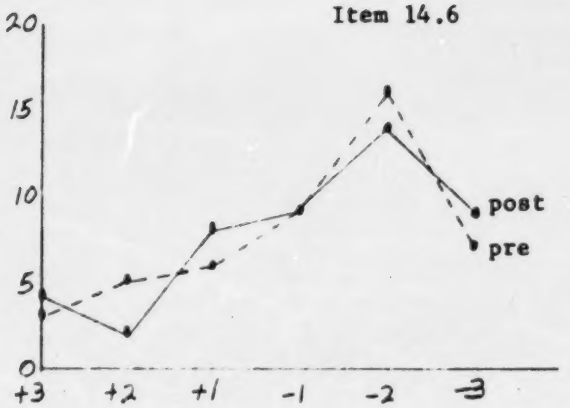


where N = 45
pre test mdn = -1
post test mdn = -1

It's the people who believe everything they read in the papers who are convinced that Russia is pursuing a ruthless policy of imperialist aggression.

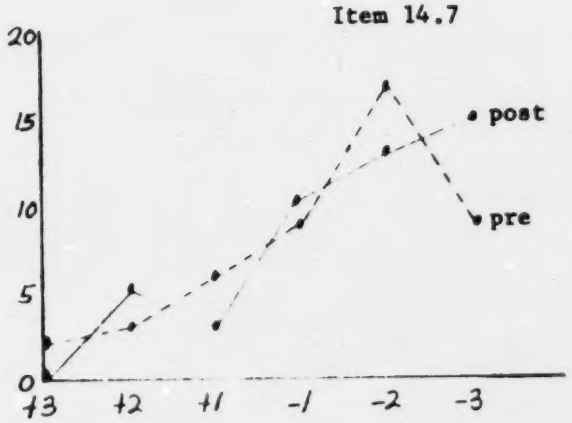
Item 14.6



where N = 46
pre test mdn = -1.5
post test mdn = -1.5

It's mainly those who believe the propaganda put out by the real estate interests who are against a federal slum clearance program.

Item 14.7



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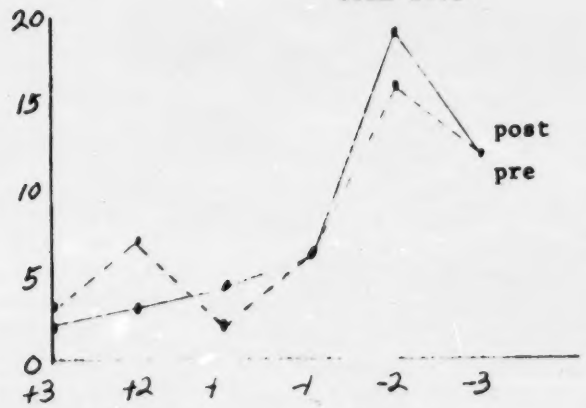
where N = 46
pre test mdn = -2
post test mdn = -2

A person must be pretty gullible if he really belives that the Communists have actually infiltrated into government and education.

Item 14.8



where N = 46
pre test mdn = -2
post test mdn = -2

It's mostly those who are itching for a fight who want a universal military training law.

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ANALYSIS OF CROSSBREAKS

Pre test scores and post test scores were summed across categories for each individual. Prior to the summation the scores were transformed from -3, -2, -1, +1, +2, and +3 to -2, -1, 0, +1, +2, and +3, in order to avoid the artificial variance which would occur if the original scores which did not have a zero point were summed. The individual's total scores were then separated into the three cultural sub-groups of Anglo, Indian, and Eskimo. The Q1, median or Q2, Q3 and range for each group are listed below:

TABLE IV.

	Anglo (N=25)		Indian (N=17)		Eskimo (N=4)	
	pre	post	pre	post	pre	post
Q1	-17	-30	- 4	- 3		
Mdn.	- 4	- 7	+25	+17	+48.5	+38.5
Q3	+21	+17	+38	+46		
Range	pre -53 to +44		-90 to +62		+18 to +56	
	post -53 to +31		-67 to +73		+22 to +57	

Lower values indicate a more open-minded belief system and higher values indicate a more closed-minded belief system. All medians Q1's and Q3's decreased, except for the Indian Q3.

The difference between each individual's pre and post test scores and the directions of change are listed below. An "O" change refers to a more open-minded or lower score and a "C" change refers to a more closed-minded or higher score on the post test.

TABLE V.

	Anglo		Indian		Eskimo	
	N	%	N	%	N	%
O-change	14	56	8	47	2	50
C-change	10	40	8	47	2	50
No change	1	4	1	6	0	0
Total	25	100	17	100	4	100

The magnitude of the O and C change difference scores for each group were inspected and the medians of these difference scores are listed below.

TABLE VI.

	Anglo	Indian	Eskimo
O shift median	19	8.5	10.5
C shift median	6	18	2.5

When the Anglo and Eskimo made a change on the post test to a more open-minded attitude, it was a relatively large change or a change on several of the test items. When they made a change to a more closed-minded attitude it tended to be a smaller change or a change on fewer numbers of test items. The opposite is true of the Indians (Table VI). This is why there is a large change in the Q3 range toward closed-mindedness in the Indian sub-group, even though equal numbers of individuals in the group made C and O changes. This also explains why the Eskimos made a large open-mindedness change in median score even though half made O changes and half made C changes (Tables IV and V).

Although the difference in the initial responses of the Anglos, Eskimos and Indians may be due to educational levels, there is little likelihood that it is due to age differences, since the groups were all quite similiar with respect to age. However, the magnitude of O verses C changes in the Indians were to the opposite direction of both the Anglo and Eskimo groups and therefore are considered unrelated to either age or education.

CONCLUSIONS

There was a significant difference between the pre and post test responses of the ABE participants in two of the fourteen categories of the Rokeach D-Scale. In nine other categories there was insignificant change in the direction of more open-minded attitudes, and in three categories there was insignificant change in the direction of more close-minded attitudes. Within some categories there was change in both directions on different items. On approximately 70 per cent of the items both the pre and post test median responses indicated open-minded attitudes on the entire group.

There were large differences in the magnitude of response changes toward more open-minded attitudes and closed-minded attitudes made by Anglos, Indians, and Eskimos, as well as differences in median scores among the three groups.

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RECOMMENDATIONS

1. Since the Rokeach D-Scale is a summated rating scale subject to response set, use of difference scores between the pre and post tests of individuals are recommended.

2. If difference scores are to be used, a separate coded scoring sheet is far more convenient for setting up the data for analysis--whether it is done by hand or machine.

3. Since the raw scores of -3, -2, -1 and +1, +2, +3 do not include a zero point and cannot be summed unless transformed, a standard manner of transformation should be specified so data is comparable from one group to another.

4. The fifth edition of the Rokeach D-Scale is in one of his books in the OCE library (The Open and Closed Mind--I think). It is the same as the 4th edition except 12 items are deleted. A copy of the fifth edition is attached. Scale of responses 3-7, are all quite acceptable.

5. Since I don't know how previous data has been transformed I have not calculated $\bar{x}$'s and sd's, but would be glad to do so if I can find out what transformations were used.

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APPENDIX

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The Rokeach D-Scale
(Fifth Edition)

This is a scale of personal beliefs on a number of topics. For each item below indicate to what extent you agree or disagree. Circle the number which best describes your attitude:

1 = disagree strongly
2 = disagree
3 = no feeling either way
4 = agree
5 = agree strongly

	Disagree strongly	Disagree	No feelings either way	Agree	Agree strongly
1. The United States and Russia have just about nothing in common.	1	2	3	4	5
2. The highest form of government is a democracy and the highest form of a democracy is a government run by those who are most intelligent.	1	2	3	4	5
3. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.	1	2	3	4	5
4. The worst crime a person could commit is to attack publicly the people who believe in the same thing he does.	1	2	3	4	5
5. In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.	1	2	3	4	5
6. A group which tolerates too much difference of opinion among its own members cannot exist for long.	1	2	3	4	5
7. It is only natural that a person should have a much better acquaintance with ideas he believes in than with ideas he opposes.	1	2	3	4	5
8. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.	1	2	3	4	5

BEST COPY AVAILABLE

		Disagree strongly	Disagree	No feelings either way	Agree	Agree strongly
9.	It is often desirable to reverse judgment about what's going on until one has had a chance to hear the opinions of those one respects.	1	2	3	4	5
10.	In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.	1	2	3	4	5
11.	The present is all too often full of unhappiness. It is only the future that counts.	1	2	3	4	5
12.	If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."	1	2	3	4	5
13.	Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on.	1	2	3	4	5
14.	Most people just don't know what's good for them.	1	2	3	4	5
15.	In the history of mankind there have probably been just a handful of really great thinkers.	1	2	3	4	5
16.	There are a number of people I have come to hate because of the things they stand for.	1	2	3	4	5
17.	A man who does not believe in some great cause has not really lived.	1	2	3	4	5
18.	It is only when a person devotes himself to an ideal or cause that life becomes meaningful.	1	2	3	4	5
19.	Of all the different philosophies which exist in this world there is probably only one which is correct.	1	2	3	4	5
20.	A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person.	1	2	3	4	5

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		Disagree strongly	Disagree	No feelings either way	Agree	Agree strongly
21.	To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.	1	2	3	4	5
22.	When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.	1	2	3	4	5
23.	In times like these, a person must be pretty selfish if he considers primarily his own happiness.	1	2	3	4	5
24.	There are two kinds of people in this world: those who are for the truth and those who are against the truth.	1	2	3	4	5
25.	My blood boils whenever a person stubbornly refuses to admit he's wrong.	1	2	3	4	5
26.	A person who thinks primarily of his own happiness is beneath contempt.	1	2	3	4	5
27.	Most of the ideas which get printed nowadays aren't worth the paper they are printed on.	1	2	3	4	5
28.	Man on his own is a helpless and miserable creature.	1	2	3	4	5
29.	Fundamentally, the world we live in is a pretty lonesome place.	1	2	3	4	5
30.	Most people just don't give a "damn" for others.	1	2	3	4	5
31.	I'd like it if I could find someone who would tell me how to solve my personal problems.	1	2	3	4	5
32.	It is only natural for a person to be rather fearful of the future.	1	2	3	4	5
33.	There is so much to be done and so little time to do it in.	1	2	3	4	5
34.	Once I get wound up in a heated discussion I just can't stop.	1	2	3	4	5

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		Disagree strongly	Disagree	No feelings either way	Agree	Agree strongly
35.	In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.	1	2	3	4	5
36.	In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.	1	2	3	4	5
37.	It is better to be a dead hero than to be a live coward.	1	2	3	4	5
38.	While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein or Beethoven, or Shakespeare.	1	2	3	4	5
39.	The main thing in life is for a person to want to do something important.	1	2	3	4	5
40.	If given the chance I would do something of great benefit to the world.	1	2	3	4	5